

Main Injector MECAR Application (PA1665, I2) - Feature #8385

Remove all \$20 cycle deceleration code

04/21/2015 02:59 PM - Kyle Hazelwood

Status:	Closed	Start date:	04/21/2015
Priority:	Normal	Due date:	
Assignee:	Kyle Hazelwood	% Done:	0%
Category:		Estimated time:	3.00 hours
Target version:	1.2	Spent time:	2.00 hours
Description <p>The votes are in... We will never again attempt to decelerate beam in the Main Injector again. The \$20 cycle was special in I2, it was purposed for decelerating antiprotons recycled from the TeVatron after a collider store. This scheme never worked and eventually it was decided that the focus should be on antiproton production instead of recycling.</p> <p>The \$20 cycle is now going to be used for RR > MI > SY beam so it now needs to be no different than the \$21 in I2. All special deceleration code in I2 needs to be removed.</p>			
Related issues: <p>Related to Main Injector MECAR Application (PA1665, I2) - Bug #8318: I2 doesn... Closed 04/13/2015</p>			

History

#1 - 04/21/2015 03:00 PM - Kyle Hazelwood

- Related to Bug #8318: I2 doesn't set I:EOB20 correctly? added

#2 - 04/21/2015 03:50 PM - Kyle Hazelwood

Changes needed:

Remove ramp.cpp lines 47, 48, 49 where \$20 specific methods are instantiated

```
static void r_disp_20_timers(int irw,int icl);
int r_20_timers_rw(int rw,float *times);
int r_20_timers_rwl(int rw,float *times); /* obsolete */
```

Edit ramp.cpp line 292 in ramp_job() where it decides which timers to display

```
else if (inbar == 7) {
    if (rb.hdr.tclk == 0x20) r_disp_20_timers(5,25);
    else r_disp_timers(5, 25, pgm.cycle);
}
```

Remove ramp.cpp lines 719-737 in r_send() where it sets the timers when sending the ramp

```
if (r->hdr.tclk == 0x20) { /* deceleration cycle */
    times[7] = ncs.slot[ncs.hdr.num_slots-1].t;
    if (ncs.slot[(int)ncs.pl.ncs_rampup_slot].p ==
        ncs.slot[(int)ncs.pl.ncs_fltop_slot].p) {
        /* just take some numbers */
        for (i = 0; i < 7; i++) times[i] = i * times[7] / 7;
    }
    else {
        times[0] = ncs.slot[(int)ncs.pl.ncs_rampup_slot].t;
        times[1] = ncs.slot[(int)ncs.pl.ncs_fltop_slot].t;
        /* D0,D1,D2 */
        times[2] = times[1] + rampp.par.prepare_offset;
        times[3] = ncs.slot[(int)ncs.pl.ncs_rampdown_slot].t;
        times[4] = ncs.slot[(int)ncs.pl.ncs_rampdown_end_slot].t;
        times[6] = ncs.slot[(int)ncs.pl.ncs_rampdown_slot].t;
/*used to be set to time[7], changed for new RR switchyard mode*/
        times[5] = times[6] - end_abort;
    }
    sts = r_20_timers_rw(SET,times);
}
```

Delete ramp.cpp lines 1778 - 1836 method r_20_timers_rw1() which is already deprecated and not used

Delete ramp.cpp lines 18298 - 1922 methods r_20_timers_rw() and r_disp_20_timers() which are no longer needed

#3 - 04/21/2015 04:17 PM - Kyle Hazelwood

Also had to remove the declare of i in the r_send() method that is used for the for loop that was removed.

Compiled PA1665 to a Z page. Will test tomorrow.

#4 - 04/22/2015 09:59 AM - Kyle Hazelwood

- Status changed from Assigned to Closed

Released this morning.